



U. S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER

Logistics Research and Engineering Directorate  
Battlefield Tools & Equipment Division

# DESCRIPTION FOR PURCHASE

## DFP-554, Rev A

[INCH-POUND]

## MAINTENANCE JACKS

## MRAP



AMSC N/A

FSC 4910

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# BATTLEFIELD TOOLS AND EQUIPMENT ENGINEERING DESCRIPTION FOR PURCHASE

No. 554, Rev A  
1 OCT 2009

## MAINTENANCE JACKS MRAP

**1 SCOPE.** This Description for Purchase describes the performance and design characteristics, required by the Government, of commercially available, manually operated, hydraulically powered, full chassis length, dolly floor jacks of 20 ton rated capacity used in automotive service applications. Short chassis jacks, end lifts, transmission lifts, bottle jack, axle jacks and other lifting devices not meeting the requirements herein are not included in this document and will not be considered as appropriate products to fill the Government's needs relating to this product and its known use of providing lifting service to the Army's MRAP vehicles.



Example of a Mine Resistant Ambush Protected vehicle

**1.1 Commerciality.** The jack required is slightly modified versions of a commercially available dolly floor jack that is normally marketed to private sector truck and large vehicle maintenance businesses. The minor modifications required may be the setting point of the overload bypass valve and some marking requirements. *(The current revision of the standard, ANSI/ASME PALD Chapter 7, allows for the over load by-pass valve setting to be between 80 and 115 percent of the rated load. The government's requirement is different. See paragraph 3.3.7 below. Any of the features or characteristics required by this document may be considered modifications by one manufacturer and as standard features by another. Except for the minor modifications mentioned above, all of the features and characteristics mentioned herein can be found on off-the-shelf commercial jacks.)*

**1.2 Market acceptability criteria.** Jacks offered under this Description for Purchase shall have been in production under the same basic design for the last 3 consecutive years and shall have

been sold through a customary distributor network to professional automotive maintenance customers on a competitive basis with other manufacturer's jacks of similar design and intended market niche. Minor modifications required by the government for this procurement are not required to meet the 3 year market history time frame. The supplier to the Government shall demonstrate that the offered product is supported with adequate spare parts, commercial operation and maintenance manuals, and established repair facilities based in a broad geographic pattern for national and international support with experience at servicing and repairing the specific offered product.

## **2 REFERENCED DOCUMENTS.**

2.1 Military Standards. The latest revision in effect on the date of the solicitation for the following standards form a part of this specification to the extent specified herein.

### **STANDARDS**

#### **MILITARY**

MIL-STD 129 – Military Marking for Shipment and Storage

MIL-STD-889 – Dissimilar Metals

MIL-STD-1916 – DOD Preferred Methods for Acceptance of Product

MIL-DTL-17111 – Fluid, Power Transmission

Military Standards and Specifications can be ordered over the internet from the DODSSP Products and Services web site, <http://dodssp.daps.mil/products.htm>. Documents related to packaging requirements may be acquired at the Defense Logistic Agency web site <http://www.dscc.dla.mil/Offices/Packaging/specstdslist.html>

2.2 Industry Standards. The following industry sponsored standards form a part of this specification to the extent specified herein. The issues of those documents that are DoD adopted shall be those listed in the issue of the DoDISS dated 15 APR 2004. The issues of documents not listed in the DoDISS shall be the issue which is current on the date of the solicitation. Current information regarding documents covered by DoDISS can be acquired over the internet at [http://dodssp.daps.mil/dodiss/15apr\\_04.PDF](http://dodssp.daps.mil/dodiss/15apr_04.PDF). The DoDISS is available on-line as a part of the ASSIST Standardization Document Management Database and can be ordered through an ASSIST subscription.

#### **AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)**

B1.1 - Unified Inch Screw Threads (UN and UNR Thread Form)

B1.13M - Metric Screw Threads - M Profile

B1.21M - Metric Screw Threads - MJ Profile

PALD 1997 - with addendum 2000a Chapter 10, entitled "Service Jacks".

(Application for copies should be addressed to ASME Headquarters, Three Park Avenue, New York, NY 10016-5990, phone (212) 591-7722, FAX (212) 591-7674 or on line at <http://www.asme.org/> or <http://www.asme.org/catalog/>.)

## AMERICAN SOCIETY FOR TESTING AND MATERIALS

### ASTM D4169 Standard Practice for Performance Testing of Shipping Containers and Systems

(Application for copies should be addressed to ASTM, 100 Barr Harbor Drive, West Conshohocken, PA, 19428-2959, Phone: (610) 832-9585, Fax: (610) 832-9555 or on line at <http://www.astm.org>.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal Agencies. As a general rule industry specifications are protected by copyright laws.)

2.3 Federal and International Transportation and Shipping Regulations. The following regulations for air and maritime transportation apply to packaging for shipment.

## INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

### Dangerous Goods Regulations 45<sup>th</sup> Edition

Applications for copies should be addressed to 800 Place, Victoria, P.O. Box 113, Montreal, Quebec, Canada, H4Z1M1. Phone (800) 716-6326. Copies may also be acquired via the internet at [HTTPS://WWW.IATAONLINE.COM/STORE/PRODUCTS/PRODUCT+DETAIL.HTM?CS\\_ID=9065%2D45&CS\\_CATALOG=PUBLICATIONS](HTTPS://WWW.IATAONLINE.COM/STORE/PRODUCTS/PRODUCT+DETAIL.HTM?CS_ID=9065%2D45&CS_CATALOG=PUBLICATIONS). Look under products and services related to “Cargo”.

## INTERNATIONAL MARITIME ORGANIZATION (IMO)

### International Maritime Dangerous Goods Code (IMDG)

Application for copies should be addressed to 4 Albert Embankment, London SE1 7SR. Phone 020-7735 7611. Copies may also be acquired via the internet at [http://www.imo.org/Safety/mainframe.asp?topic\\_id=158#4](http://www.imo.org/Safety/mainframe.asp?topic_id=158#4).

## CODE OF FEDERAL REGULATIONS (CFR)

### TITLE 29, TITLE 40 AND TITLE 49

Copies may be acquired via the internet at <http://www.gpoaccess.gov/ecfr/>.

## Joint Service Regulation

AFMAN24-204(I)/TM38-250/NAVSUPPUB 505/MCO P4030.19H/DLAM 4145.3 -  
Preparing Hazardous Materials for Military Air Shipment

Copies may be acquired via the internet at [http://www.e-publishing.af.mil/pubfiles/af/24/afman24-204\(i\)/afman24-204\(i\).pdf](http://www.e-publishing.af.mil/pubfiles/af/24/afman24-204(i)/afman24-204(i).pdf). (Phone (800) 848-9577)

2.4 Order of Precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained by the contractor.

### 3 SALIENT CHARACTERISTICS.

3.1 Completeness. When the Government solicits for jacks under this document it is the intent and requirement of the Government to acquire completely assembled and readily usable jacks. It is the bidder's or contractor's responsibility to bring to the attention of the Government's Contracting Officer such incompatibilities or omissions of equipment that would seem incongruous or prevent the jacks from being fully functional when received by the end user. It is permissible to ship the jacks with the pump handles detached and packed in the same container as the jacks to reduce the volume of the shipping containers. Jack handles shall be packed in the same container with the jacks they are to attach to and not be packed separately.

3.2 Design. The jacks offered to the government shall meet all of the requirements of the American Society of Mechanical Engineers Safety Standard for Portable Automotive Lifting Devices, PALD 2005, Part 7, entitled "Service Jacks" and all further requirements set forth in this specification. In the event of a perceived conflict between the PALD standard and this document, this document shall take precedence. *(Jacks offered from different manufacturers and suppliers may have varying design characteristics such as two speed pumping mechanisms or single speed pumping mechanisms with foot pedals for rapid rise of the saddle to contact the load. Air over hydraulic systems will not be acceptable to meet this requirement. Any other offered mechanical/hydraulic design may be considered for acceptance based upon its demonstrated ability to meet all of the other requirements in this document.)*

3.3 Product requirements. The following product requirements are in addition to those that are required by ANSI/ASME PALD Part 7.

3.3.1 Chassis length. The full length of the 20-ton rated chassis shall be not less than 69 inches, excluding the handle.

3.3.2 Lifting distance. The 20-ton jack shall be capable of lifting the full rated load from its lowest position, at no higher than 7.5 inches (the saddle must be able to slide under an object where the clearance is no more than 7.5 inches), to its highest position, at no lower than 26.25 inches.

3.3.3 Force on handle. The 20-ton load shall be lifted from the lowest position to the highest position with no more than 180 pounds of force applied at the "T" on the handle.

3.3.4 Handle design. The pump handle for both sizes of jack shall be no more than 54 inches long from the pivot point to the "T" on the end of the handle. A "T" on the handle is required.

3.3.5 Hydraulic fluid. Only hydraulic fluids that produce no adverse effects on health and for which no special precautions are required beyond attention to good personal hygiene such as washing with soap and water shall be used. Two copies of a Material Safety Data Sheet for the hydraulic fluid shall be over packed with each jack. The fluid used in the jack shall be a general purpose hydraulic fluid of ISO Viscosity grade 32 with anti-wear, oxidation resistance, a pour point at or below -40F and rust and corrosion protection. The hydraulic fluids and seals shall be compatible with each other. Example fluids may be Mobil DTE 13 M, Shell Tellus T 32, Texaco Rando HDZ 32, Exxon Univis N 32, and Chevron Rykon Premium Oil 32. This list is not meant to be all-inclusive but is offered to help clarify the requirement by example. Fluids conforming to MIL-DTL-17111 will be acceptable as well. Aircraft grade fluids and fire retardant fluids are not required.

3.3.6 Hydraulic fluid labeling. The following message shall be applied in a permanent manner with large plain type near the filler plug(s) of the hydraulic fluid reservoir in such a position that it will be seen by anyone attempting to refill the reservoir. Fill in the name and type of hydraulic fluid that is used in the jack.

CAUTION  
USE NO OTHER FLUID THAN  
(Fill in your fluid identification here)

3.3.7 Overload bypass valve. The jack shall incorporate a hydraulically activated overload protection system which is separate in design and operation from the load release system, is not externally adjustable by the user and which is located in the pump side of the hydraulic circuit such that it shall bypass hydraulic fluid from the pump to the reservoir when experiencing an overload on the saddle. The valve shall be adjusted to operate at a load between 100% of the jack's rated load and 115% of the jack's rated load. *(Although the ANSI/ASME safety standard allows for a setting between 80 and 115 percent, this has caused a problem that is peculiar to the military users. Each year, by regulation, they must test the jacks to verify that they can safely lift and hold the maximum rated load. The testing procedure is simple and results in a pass or fail condition. The procedure does not include or allow any manipulation or resetting of the overload bypass valve. If the valve is set to bypass at a load that is less than 100 percent of the advertised rated load then the jack begins to bypass at that lower load and the "soldier/tester" determines that the jack can no longer lift its rated load. A design engineer who understands the hydraulic circuitry of the jack will understand what this means. The soldier doesn't. He tags it as "UNSAFE – DO NOT USE" and chains it to a post so that no one can take it away and use it by accident. This has happened on several occasions where 100 percent of all brand new jacks tested were marked as unsafe and locked up. It is not an easy task to find every location that performs these tests and cause them to rewrite their testing procedures and pass/fail criteria to avoid the problem. This requires arguing with the local base safety officers to get it accomplished. It is easier to purchase a 10 ton jack that actually lifts 10 tons. Until recently the ANSI/ASME PALD standard did require the bypass valve to be set between 100 percent and 115 percent of the rated load. Until the change by ASME the*



*military did not experience this problem. The unfortunate side effect of the problem is that the manufacturer of the jacks that were locked up had to endure the negative advertising that resulted when word of mouth spread the information among the soldiers that the particular brand that was tested was “100% junk.”)*

3.3.8 Load release system. The hydraulic unit shall incorporate a manually activated and controlled hydraulic release system to permit controlled lowering and complete stopping, at any position of the saddle, when the saddle is either fully loaded or completely unloaded, throughout the entire range of saddle travel. The load release system shall control the saddle’s overall rate of descent to one foot per minute or slower throughout the full range of saddle travel, without stopping, while under full rated load. The release system shall be controlled at the “T” or cross end of the handle.

3.3.9 Hydraulic over-travel bypass system. The hydraulic system shall incorporate a hydraulic fluid bypass to prevent over-travel of the lifting member after reaching its highest raised position. Unlimited buildup of hydraulic pressure, after reaching the point of highest rise, will not be acceptable.

3.4 Manuals and operating instructions. Two sets of Commercial manuals and operating instructions shall be over packed with each jack furnished. The manuals and instructions shall be written in American English dialect and shall be printed in a clean and legible manner. The manuals and operating instructions shall include safety, setup, operation, maintenance, and repair information, addresses of dealer/distributors that do repair work, and a list of replaceable parts with part numbers. The manuals and operating instructions may be in the manufacturer’s format and shall include the following information on the front cover.

- a. The nomenclature: “Jack, Dolly Type, Hydraulic, Automotive Service, 20 Ton”.
- b. The contract number under which the jack was sold.
- c. The manufacturer’s name and CAGE CODE.
- d. The suppliers name, address and CAGE CODE if different from the manufacturer.

Appropriate Material Safety Data Sheets shall be provided with the manuals and operating instructions (see 3.3.5).

3.4.1 Copyright. The owner of the copyrights shall extend copyrights for the manuals and operating instructions and spare parts lists to the Government and provide a letter to the Government’s contracting officer to that effect.

3.5 Reclaimed materials. The manufacturer may use reclaimed materials for fabricating new parts. Reclaimed materials shall be reprocessed, remanufactured, or recycled in a manner that restores them to the same chemical composition and physical properties as the virgin materials originally selected for use. Use of reclaimed parts as is or rebuilt from scrap or other used equipment is not permitted.

3.6 Dissimilar metals. Appropriate measures as recommended by MIL-STD-889 shall be taken to prevent galvanic corrosion.

3.7 Special markings. In addition to all of the marking required elsewhere in this specification, the jack shall also be permanently marked with the following contract data:

- a. full Government contract number
- b. date of manufacture
- c. name and address of manufacturer
- d. Point of Contact for warranty matters

## **4 Quality Assurance Provisions**

4.1 Responsibility for compliance. All delivered items must meet all requirements of this contract. The absence of any verification requirements shall not relieve the contractor of the responsibility of assuring that all products submitted to the government for acceptance comply with all requirements of the contract.

4.1.1 Inspections. Conformance inspection shall be applied to units being offered for acceptance under the contract. These inspections shall include all verifications listed in paragraph 4.2. Failure to pass any examination shall result in failure of that lot. Jacks that fail any examination shall not be offered to the government for acceptance.

4.1.2 Submission. Lot formation shall be in accordance with MIL-STD-1916.

4.1.3 Sampling Size. Sampling shall be conducted in accordance with MIL-STD-1916 using Verification Level (VL) I.

4.2 Verification procedures. Design proof testing and quality control of characteristics resulting from manufacturing processes are covered in ANSI / ASME PALD Part 7. The manufacturer shall provide written certification to verify that programs to ensure the required performance and quality as specified in PALD Part 7 and this Description for Purchase are in place in the manufacturing environment for the products delivered in accordance with this document. The Government reserves the right to perform any or all of the product verification procedures at any time and at any location it so chooses to assure continuous compliance with all requirements. The Government will require that the following verification procedures be performed to assure that the product offered meets all of the advertised requirements.

4.2.1 Product conformance verification. Product conformance verification shall be performed to provide clear evidence that the jacks offered for delivery under this contract are designed and manufactured to perform as required. Product conformance verification shall be performed at the beginning of the contract on three jacks fully representative of the production units, assembled, painted and marked as required. Each of the three units shall be subjected to the full set of examinations and verifications as specified herein. The product conformance



verification requirements specified herein are classified as follows:

- a. Product examination (see 4.3)
- b. Performance verification (see 4.4)
- c. Packaging inspection (see 4.5)

4.2.2 Failure to verify conformance. Failure to provide complete and adequate evidence of product conformance at the beginning of the contract shall be construed as evidence that the products tested and all products that they represent are not in conformance with the requirements of this contract. As a result of failure to verify product conformance the Government may seek remedy under the termination clause of the contract.

4.3 Product examination. Visually and manually examine each jack. Visual examination shall include verification of completeness of manufacture and assembly, proper cleaning, and freedom from the identified defects. Manual examinations shall include the operation of movable parts by hand to assure proper functioning.

4.3.1 Verification of size. Verify each jack for the following measurements. Verify that the rated capacity is marked on the jack and that it is as required.

- a. Chassis length - not less than 69”.
- b. Lowest saddle position (height) - no higher than 7.5”.
- c. Highest saddle position (height) - no lower than 26.25”.
- d. Handle length - no more than 54 inches long

Failure of a sample jack to meet these measurement requirements shall be cause for rejection of the entire quantity of products offered for delivery. Further verification shall not be performed upon product that did not pass this verification of size requirements.

4.3.2 Verification of features. The same jack shall be examined to determine the presence of the following features:

- a. The jack shall be fully assembled, with its handle attached
- b. The handle shall have a “T” on the end of it
- c. The hydraulic fluid identification shall be permanently marked near the reservoir and it shall identify the proper fluid for refilling the jack.
- d. There shall be a manually activated load release system with control located at the “T” on the handle.
- e. Commercial manuals and operating instructions shall be with the jack.  
The commercial literature shall be written in American English, shall be printed in a clean and legible manner and shall include safety information, the set up procedure, operating procedure, maintenance and repair information, the addresses of dealers or distributors who can perform repair work and a list of replaceable parts with part numbers.”

Failure of a sample jack to have these features present shall be cause for rejection of the entire quantity of products offered for delivery. Further verification shall not be performed upon product that did not have these features.

4.4 Verification of product performance. The sample jack shall be operated and/or tested as follows to verify the required performance.

a. The jack shall be operated to demonstrate the force applied to the handle in a downward direction to lift the rated load. The rated load shall be applied to the saddle and the load shall be lifted from the lowest position to the highest position with no more than 180 pounds.

b. The jack shall be operated to demonstrate the overload bypass valve. A load equal to the rated load of the jack shall be applied to the saddle and the load lifted. Another load equal to 115% of the rated load of the jack shall be applied to the saddle and the jack pumped to attempt to lift the load. The jack shall successfully lift the rated load and fail to lift the overload. The location of the overload bypass valve setting device shall be pointed out and the method of denying this setting feature to the soldier shall be explained. The location of the valve in the hydraulic circuitry shall be explained with the use of engineering drawings and/or hydraulic circuit diagrams.

c. The jack shall be operated to demonstrate the load release system. The rated load shall be applied to the saddle and raised to its highest position. The release mechanism shall be operated to lower the load to its lowest position, stopping along the way to demonstrate the ability to halt the load at any desired point and retain the load in position without uncontrolled further lowering. The load shall be raised to its highest position again and the release mechanism operated to demonstrate controlled lowering throughout the entire lifting range. The load shall be lowered, using the release mechanism, at a rate no faster than 1 foot per minute with no stops along the way.

d. The jack shall be operated to demonstrate the hydraulic over-travel bypass system. The jacks lifting arm shall be pumped as high as it can travel and pumping shall continue. The hydraulic fluid bypass valve shall automatically act to prevent unlimited buildup of hydraulic pressure, after reaching the point of highest rise.

e. The jack shall be subjected to laboratory testing to verify the jack's conformance to all of the PALD Part 7 safety requirements, including the ability to lift and retain the load with out bending or failure. A laboratory report shall be submitted to the contracting officer clearly indicating each test and the test result before any shipment of products to the government will be authorized. Failure of the tested jack to meet these performance requirements shall be cause for rejection of the entire quantity of products offered for delivery. Further verification shall not be performed upon product that did not pass this verification of performance requirements.

4.5 Verification of packaging performance. The packaging shall be verified to the performance criteria of paragraph 5.5.2.

4.5.1 Alternate Stacking verification. To verify the stacking performance four 20 ton jacks that have been packaged per the instructions in section 5 shall be presented for verification. The gross weight and cube of each unit package shall be recorded on the verification report sheet. All

four packaged 10 ton jacks shall be stacked, one upon the other, until a height of 4 units, respectively, is achieved. They shall be left in this condition for one hour. At the end of one hour the packaging shall be examined to determine that fracturing, leaning, tipping over, sagging or separation of joints have not occurred.

4.5.2 Forklift handling verification. The jacks shall then be restacked by forklift so that the wooden box that was on top is now on the bottom and the wooden box that was on the bottom is now on the top. The packaged jacks shall be restacked in this manner a total of five times by forklift with no sagging or tilting in any direction, and shall endure frequent moving and restacking without deterioration of the structural integrity of the wooden boxes

4.6 Changes to materials, processes, or configuration. The contracting officer shall be informed of any changes to the materials, processes, configuration or other characteristic of the jacks. The contracting officer shall determine if the reported changes will require any or all of the verifications of paragraph 4.2 to be repeated.

4.7 Conformance of subsequent production quantity. All products offered for acceptance throughout the life of the contract shall conform to all of the requirements of the contract. The Government reserves the right to re-verify conformance with requirements, at its own facility and at its own expense, at any time during the life of the contract and return to the contractor for warranty replacement such product that does not conform to the specified requirements.

## **5 PRESERVATION AND PACKAGING**

5.1 Preservation, packing, and marking. The preservation, packing, and marking requirements for the item identified above shall be accomplished in accordance with the performance requirements defined herein. The following Packaging requirements shall apply:

5.1.1 Packaging. Preservation, packaging, packing, unitization and marking furnished by the supplier shall provide protection for a minimum of one year, provide for multiple handling, redistribution and shipment by any mode and meet or exceed the following requirements.

5.1.2 Cleanliness. Items shall be free of dirt and other contaminants which would contribute to the deterioration of the item or which would require cleaning by the customer prior to use. Coatings and preservatives applied to the item for protection are not considered contaminants.

5.1.3 Preservation. Items susceptible to corrosion or deterioration shall be provided protection by means of preservative coatings, volatile corrosion inhibitors, desiccants, waterproof and/or water-vapor-proof barriers.

5.1.4 Cushioning. Items requiring protection from physical and mechanical damage (e.g. fragile, sensitive, material critical) or which could cause physical damage to other items, shall be protected by wrapping, cushioning, pack compartmentalization, or other means to mitigate shock and vibration to prevent damage during handling and shipment.

5.2 Unit Package. A unit package shall be so designed and constructed that it will contain the contents with no damage to the item(s), and with minimal damage to the unit pack during shipment and storage in the shipping container, and will allow subsequent handling. The outermost component of a unit package shall be a container such as a sealed bag, carton or box. Unit packs shall be designed to have minimum size and weight while retaining the protection required and enhancing standardization.

5.3 Unit Package Quantity. Unless otherwise specified, the unit package quantity shall be one each part, set, assembly, kit, etc.

5.4. Intermediate Package. (as applicable) Intermediate packaging is required whenever one or more of the following conditions exist:

- a. the quantity is over one (1) gross of the same national stock number,
- b. use enhances handling and inventorying,
- c. the exterior surfaces of the unit pack is a bag of any type, regardless of size,
- d. the unit pack is less than 64 cubic inches,
- e. the weight of the unit pack is less than five (5) pounds and no dimension is over twelve (12) inches.

Intermediate containers shall be limited to a maximum of 100 unit packs, a net load of 40 pounds, or a maximum volume of 1.5 cubic feet, whichever occurs first.

## 5.5 Packing.

5.5.1 Unit and intermediate packages. Unit packages and intermediate packages meeting the requirements for a shipping container may be utilized as a shipping container. All shipping containers shall be the most cost effective and shall be of minimum cube to contain and protect the items.

5.5.2 Shipping Containers. The shipping container (including any necessary blocking, bracing, cushioning, or waterproofing) shall comply with the regulations of the carrier used and shall provide safe delivery to the destination at the lowest tariff cost. The shipping container shall be capable of multiple forklift moves from the front and rear of container, stacking at least ten feet high, and storage under favorable conditions (such as enclosed facilities) for a minimum of one year.

5.6 Unitization. Shipments of identical items going to the same destination shall be palletized if they have a total cubic displacement of 50 cubic feet or more unless skids or other forklift handling features are included on the containers. Pallet loads must be stable, and to the greatest extent possible, provide a level top for ease of stacking. A palletized load shall be of a size to allow for placement of two loads high and wide in a conveyance. The weight capacity of the pallet must be adequate for the load. The pallet shall be a 40 x 48 inch, 4-way entry pallet although variations may be permitted as dictated by the characteristics of the items being unitized. The load shall be contained in a manner that will permit safe handling during shipment and storage.

5.7. Marking. All unit packages, intermediate packs, exterior shipping containers, and as applicable, unitized loads shall be marked in accordance with MIL-STD-129, Revision P Change

Notice 4, dated 19 Sep 2007 including bar coding and a MSL label. Unit marking will be in compliance with paragraph 4.1.1 of MIL-STD-129P. When a shipment requires more than one shipping container, markings will be in accordance with paragraph 5.2.14 of MIL-STD-129P, 1 of 2, 2 of 2. The nomenclature will be omitted from the exterior shipping container.

The contractor is responsible for the application of special markings as discussed in the Military Standard regardless of whether specified in the contract or not. Special markings include, but are not limited to, Shelf-life markings, structural markings, and transportation special handling markings. The marking of pilferable and sensitive materiel will not identify the nature of the materiel. Passive RFID tagging is required in all contracts that contain DFARS clause 252.211-7006. Contractors must check the solicitation and/or contract for this clause. For details and most recent information, see <http://www.acq.osd.mil/log/rfid/index.htm> for the current DoD Suppliers' Passive RFID Information Guide and Supplier Implementation Plan. If the item has Unique Item Identifier (UII) markings then the UII needs to be 2D bar coded and applied on the unit package, intermediate and exterior containers, and the unit load.

## 5.8 Hazardous Materials (as applicable):

5.8.1 Definition. Hazardous Materials is defined as a substance, or waste which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and which has been so designated. (This includes all items listed as hazardous in Titles 29, 40 and 49 CFR and other applicable modal regulations effective at the time of shipment.)

5.8.2 Packing and markings. When applicable, the packaging and marking for hazardous materials shall comply with the requirements for the mode of transport and the applicable performance packaging contained in the following documents:

International Air Transport Association (IATA) □ Dangerous Goods Regulations  
International Maritime Dangerous Goods Code (IMDG) □  
Code of Federal Regulations (CFR) Title 29, Title 40 □ and Title 49  
Joint Service Regulation □ AFJMAN24-204/TM38-250/NAVSUPPUB 505/MCO  
P4030.19/DLAM 4145.3 (for military air shipments).

5.8.3 OCONUS Shipments. If the shipment originates from outside the continental United States, the shipment shall be prepared in accordance with the United Nations Recommendations on the Transport of Dangerous Goods in a manner acceptable to the Competent Authority of the nation of origin and in accordance with regulations of all applicable carriers.

5.8.4 MSDS sheets. A Product Material Safety Data Sheet (MSDS) is required to be included with every unit pack and intermediate container and shall be included with the packing list inside the sealed pouch attached to the outside of the package.

5.9 Heat Treatment and Marking of Wood Packaging Materials. All non-manufactured wood used in packaging shall be heat treated to a core temperature of 56 degrees Celsius for a minimum of 30 minutes. The box/pallet manufacturer and the manufacturer of wood used as inner packaging shall be affiliated with an inspection agency accredited by the board of review of the

American Lumber Standard Committee. The box/pallet manufacturer and the manufacturer of wood used as inner packaging shall ensure tractability to the original source of heat treatment. Each box/pallet shall be marked to show the conformance to the International Plant Protection Convention Standard. Boxes/pallets and any wood used as inner packaging made of non-manufactured wood shall be heat-treated. The quality mark shall be placed on both ends of the outer packaging, between the end cleats or end battens; on two sides of the pallet. . Foreign manufacturers shall have the heat treatment of non-manufactured wood products verified in accordance with their National Plant Protection Organization's compliance program. In addition, wood used as dunnage for blocking and bracing, to include ISO containers, shall be ordered with ALSC certified marking for dunnage or the markings may be applied locally at two foot intervals.

5.10 Quality Assurance. The contractor is responsible for establishing a quality system. Full consideration to examinations, inspections, and tests will be given to ensure the acceptability of the commercial package



## HISTORY OF CHANGES

Adopted from DFP 391

Added para 4.3.1 RDAR-QEM-G Gary Niemiec 9/1/09

Added new section 5, Packaging by RDAR-EIL-TP

**Initial Release:** 17 Sep 2009

**Rev A:** 1 Oct 2009

1. Deleted para 1.3 Alternative to Market Place Acceptability. There is no acceptable alternative for this product.
2. Added a pre-production verification to the Quality Assurance Section 4 and renumbered the remaining section 4 paragraphs to follow consistent numbering plan.
3. Para 4.5, changed para reference to 5.5.2.